

# ***FSA Modernization Partner***

**United States Department of Education**

**Federal Student Aid**



## **Technical Architecture Application Maintenance Services Report**

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## **1 Executive Summary**

The *Technical Architecture Application Maintenance Report: May 2002 for FY 2002* summarizes the Integrated Technical Architecture (ITA) team's tasks related to resolving issues associated with the maintenance of FSA applications in production, for the specified month. The ITA provides a standardized, reusable infrastructure for enabling business capabilities within the FSA application community. The long-term vision of the ITA is to provide an integrated, enterprise-wide technical architecture that will enable FSA to reduce the number of custom-built applications that are difficult and costly to update and maintain.

## **2 FSA Applications Maintained by the ITA in Production**

- FAFSA – the Free Application for Federal Student Aid on the web is an application used by college students and schools to submit financial applications via the Internet
- IFAP – Information for Financial Professionals web site is an electronic library for financial aid professionals containing publications, regulations, and guidance regarding the administration of Title IV Federal Student Aid Programs
- SFA Intranet – is an internal portal, for FSA employees, that provides general information about FSA, FSA Channels, and the Department of Education. The portal also houses information about FSA standards
- Schools Portal – is a homepage for Schools-specific information with links, headlines and calendar function frequented by the schools. The site is customizable and can store bookmarks
- eCampus Based – FSA initiated the Institution or Campus Based (CB) Modernization project. The intent of the project is to modernize the existing CB application architecture; migrating from the current platform (COBOL, IBM Mainframe, VSAM data store) to a relational database platform (Oracle), developing a web-based user interface (WebSphere), along with additional software functionality enhancements. This modernized solution is named eCB (electronic Campus Based). The main objective of the modernization effort is to offer institutions and CB staff an integrated and intuitive solution that increases access to information and self-service capabilities supporting FSA's strategic goals
- Financial Partners Data Mart – provides executive information and decision support capabilities around several key business functions for both the Guaranty Agencies (GAs) and the Lenders. The Data Mart initiative provides infrastructure within the channel and provides initial Risk Management, Customer Relationship Management, Compliance Management, and Portfolio Management functionality related to the thirty-six Guaranty Agencies and the approximately four thousand lenders
- CFO Data Mart – provides reporting capabilities to the Chief Financial Office implementing MicroStrategy and Informatica



- Exit Counseling – utilizes WebSphere and MQ Series to access NSLDS mainframe for specific information
- Students.gov - an award-winning interagency portal sponsored by FSA that provides access to a wide range of public and private information and services targeted towards prospective and current post-secondary education students and their parents
- Program Guidance – provides a central location for resources needed by the Program Development Division within FSA. The application provides documents and profiles to identify relevant information quickly for members of this division.
- Students & FP Portal – Portals were developed for the Students and Financial Partners channels to provide a central location for information needed by students and financial partners.

### **3 ITA Products**

- IBM HTTP Server – web server
- IBM WebSphere – Java application server
- Network Dispatcher – cluster load balance and failover
- Interwoven – content management application
- Informatica – mainframe data tool that converts mainframe data for Oracle so reports can be generated by MicroStrategy
- Autonomy – search engine
- Viador / JRun – Viador is the product or application for the Schools Portal and JRun is the application server

### **4 Issue Matrix**

The following matrix details the issues encountered by the ITA team from May 1, 2002 to May 31, 2002. The matrix is organized chronologically by application name and date to illustrate the team's progress in resolving the majority of issues and the instances in which the team directed its efforts to seek resolution for an issue. Subsequently, the matrix consists of the following categories: name of the application connected to an issue, description of the issue, steps taken by the ITA team to resolve an issue, the issue's level of priority ranging from high to medium to low, the issue's status whether new, in progress, or closed, and the issue's resolution date. Some issues span a greater time period and closure may not have been possible before the deadline of this report.



## 5 Issue Resolution Log

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
May 10, 2002	Interwoven	To accommodate the FAFSA request of being able to be deploy content, Interwoven OpenDeploy is required to be upgraded to support the HP environment.	The upgrade was successfully completed on May 30. All users are able to deploy content to their respective domains.	Medium	Closed	May 30, 2002
April 26, 2002	Interwoven	Directory structures for IFAP and Portals were viewable by all users. IFAP, intranet, and Portals team deployments are all located in the same screen and openly accessible.	Viewing permissions have been changed. The ITA team developed a script to allow users to only see relevant information.	Medium	Closed	May 15, 2002
May 1, 2002 – May 30, 2002	FAFSA	WebSphere is recreating the table in the session database when it restarts under a heavy load. This issue has been observed three times in the production environment.	Tested IBM's temporary fix to the Session Creation problem. This fix does not allow WAS to drop the table since it already exists. The fix also prints extra debug messages that explains why WAS drops the session table. This fix is now installed on all WAS servers. Recreation of this problem has not been successful to identify why WebSphere was trying to recreate the table.	Medium	Ongoing	N/A



Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
May 1, 2002 – May 30, 2002	FAFSA	ITA team was tasked with transitioning FAFSA Operations tasks to the VDC team. These tasks involve WebSphere maintenance and configuration as well as Network Dispatcher.	<p>Ongoing meetings with CSC have been established to transition all tasks involved with FAFSA operations to their team. This task was finalized March 15, 2002. The ITA continues to support the CSC operations team when needed.</p> <p>The ITA team continues to support CSC personnel in the FAFSA production environment.</p>	Low	Ongoing	N/A
May 1, 2002 – May 30, 2002	FAFSA	Weekly FAFSA production calls have been scheduled to address issues.	The ITA team has continuously been represented at these meetings and ensures that issues are being resolved promptly.	Low	Ongoing	N/A
May 1, 2002 – May 30, 2002	FAFSA	Current FAFSA production contains excess number of servers to support the off-peak environment. The steady state configuration has been determined and a plan has been initiated to achieve that environment.	<p>The ITA team developed a proposal for an environment that would support FAFSA off-peak requirements. This configuration consisted of existing servers with a small number of excess servers. These extra servers are to be utilized for an HP performance test environment. The schedule has been agreed upon and change requests are pending to decommission servers in the production environment.</p> <p>The ITA team developed a process and worked with CSC and IBM to remove all of the requested servers from the production environment. There is one additional WebSphere server to be removed from the environment. Once that is complete, the four excess servers will be re-networked to the test network to provide a performance test environment for FAFSA 7.0.</p>	Low	Ongoing	N/A



Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
May 1, 2002 – May 30, 2002	FAFSA	Web server processes are failing to respond to requests from I.H.S and causing a single CPU to peak at 100% utilization. The application is not impacted, but the server performance is skewed.	<p>This is an ongoing problem. IBM has recommended an upgrade to I.H.S, but this must be tested throughout each environment. As a temporary solution, the process that is hanging the CPU is 'killed' so that performance resumes normally. A schedule to upgrade the version of I.H.S will be presented. This upgrade must be executed and tested in each environment before it can be moved into production.</p> <p>The development environments have been successfully upgraded. The production upgrade is scheduled for the middle of June.</p>	Low	Ongoing	N/A
May 1, 2002 – May 30, 2002	FAFSA	Operations have reported that the FAFSA WebSphere configuration takes some time to initialize if all Servers are rebooted together.	The WAS admin database was only setup for a maximum of 100 connections from the WAS cluster by the CSC admin. ITA has requested that this be increased to 500. These initial attempts to resolve this problem have not successful. The ITA team is currently working with IBM to try to recreate this problem outside of the production environment. A window in production will need to be established to test some scenarios.	Medium	Ongoing	N/A



Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
May 21, 2002 – May 30, 2002	FAFSA	FAFSA is experiencing periodic issues of clones hanging and not accepting connections from the web servers. This causes web servers to back up and eventually cause delays to users of FAFSA.	It was discovered that CSC implemented some Wily instrumentation two days before this problem began to occur. This included different drivers for FAFSA to access its datasources. The ITA spent several days on conference calls to troubleshoot and attempt to fix this issue. Wily is scheduled to be backed out of the FAFSA environment to determine the root cause of this error. IBM, Wily, CSC, and ITA have worked together on resolving this issue. The next steps are to back out the Wily implementation to determine if this is an application error. The system will be monitored once this change is implemented.	High	Ongoing	N/A
May 1, 2002	FAFSA	The FAFSA demo production environment needs to move in to a production system.	As a first step, we are moving the environment's databases to the production database server. We are also exploring possible final locations for this site.	Medium	Ongoing	N/A
May 6, 2002	Students Portal	The Students Portal site was unavailable to all users.	During the monthly reboot of the servers, a configuration parameter was not configured correctly to restart. The ITA team identified the issue and notified CSC of what needed to be done to regain access to the Students Portal site.	Medium	Closed	May 6, 2002





Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
May 6, 2002	Schools Portal	The Schools Portal business owner has requested a cleanup of the production database for the Schools Portal to eliminate all unneeded user ID's.	<p>The Viador admin application was not functioning properly inside the VDC firewall. The ITA worked with Viador support to attempt to get the admin functionality to work correctly. Manual scripts were provided by Viador to delete user ID's from the database. This task was then transitioned to the application operations team.</p> <p>During the initial run a problem was encountered with Viador. A new plan must be established and executed to minimize impact to production application.</p>	Low	Ongoing	N/A



Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
May 6, 2002	Schools Portal	Existing users cannot login and new users cannot create new accounts	<p>The ITA team worked with CSC to attempt a restart of Viador and JRun. This did not resolve the problem. Several problems were encountered during startup in Viador connection to the database. Viador support was called to assist in troubleshooting. Commands were executed to reset ID and password for Viador connection to the database.</p> <p>It was found the Operations team was running a data record deletion script against the database. The start time of the script coincided with the start time of this issue. The script was also running while troubleshooting. The script was terminated for further troubleshooting. After the termination of the database deletion script, database connection error occurred. Database connection was reset but did not resolve the problem. It was decided to restore the file system on server and then the database if needed.</p> <p>Restoring the file system resolved the database connection issue. Server was restarted and access was retained.</p>	High	Closed	May 6, 2002



Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
May 6, 2002	Schools Portal	Existing users cannot login and new users cannot create new accounts	Viador and JRun services were restarted to regain access.	High	Closed	May 6, 2002
May 28, 2002	Schools Portal	Existing users cannot login and new users cannot create new accounts	Each week, JRun is scheduled to restart to recover from a database backup. This restart caused hung processes within Viador and JRun. Viador and JRun services were restarted to regain access.	High	Closed	May 28, 2002
May 10, 2002	IFAP	Operations team requested a list of all documents missing a specific data tags for Autonomy for team's cost proposal to fix files at the request of FSA.	Developed and ran Perl script on IFAP directories to determine errant filenames.	Medium	Closed	May 10, 2002
May 10, 2002	IFAP	Operations team requested to remove invalid Autonomy data tags from documents within application.	Developed and ran Perl script on IFAP directories to remove invalid date tags.	Medium	Closed	May 17, 2002
May 16, 2002	IFAP	Operations team requested a list of all documents (PDF or office) that are not attached to an HTM or HTML document for team's cost proposal to fix files at the request of FSA.	Developed and ran Perl script on IFAP directories to determine which documents (PDF or office) are unattached.	Medium	Closed	May 23, 2002



**ITA Release 3.0**  
**Technical Architecture Application**  
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Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
May 17, 2002	Intranet	Application files located in root directory of Interwoven intranet branch do not successfully deploy to production servers.	Created an htdocs directory in Interwoven intranet branch to contain root-level documents. Deployments to production servers are now successful.	Medium	Closed	May 17, 2002
April 1, 2002	eCampus Based	Production eCB currently has a persistent session issue where session data was not available to both WebSphere nodes.	The ITA team discovered that the eCB session cookie is not named properly. Tested fix within the performance environment. Fix is now being scheduled for propagation to production.	Medium	Ongoing	N/A
May 1, 2002 – May 31, 2002	eCampus Based	The eCampus Based System project is slated to enter production the first weekend of June.	The final build and test will be the first week in June, from 6/1 – 6/6. Scripts and instructions we provided to complete this build.	Medium	Ongoing	N/A
May 14, 2002 – May 28, 2002	Program Guidance	The Program Development project is being moved into production. There have been several delays within this move because of approvals and final work.	The final build of the production environment should be completed by the week ending on 5/31. The ITA team to complete the build of this environment provided scripts and directions.	Medium	Ongoing	N/A



## 6 WebSphere Upgrade

The following is a table outlining the upgrade to WebSphere from 3.5.3 to 3.5.5 in the SUN production environment.

Enhancements		
WebSphere upgrade to 3.5.5 scheduled for Late June	WebSphere	In order to take of advantage of additional functionality, the ITA team is scheduling an upgrade to WebSphere in all SUN environments. This upgrade will take place over the month of June and will include all environments and applications. Communications will be sent out as each environment is upgraded and tested to validate all applications. This upgrade is scheduled to be completed by the end of June.